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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,125	05/15/2002	Thomas Jansing	32860-000265/US	6204
30596	7590	07/13/2004		
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			EXAMINER CREPEAU, JONATHAN	
			ART UNIT	PAPER NUMBER
			1746	
DATE MAILED: 07/13/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/031,125

Applicant(s)

JANSING, THOMAS

Examiner

Jonathan S. Crepeau

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/6/02, 1/9/02
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 8, 9, 11, 12, and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nazmy (U.S. Patent 5,064,734). The reference is directed to a fuel cell comprising electrodes (2, 3), current collecting members (7), and interconnecting plates (4) (see Fig. 1). The current collecting members are in the form of a fabric or fleece (i.e., mesh) (see col. 8, line 53). The members are made of an oxide-dispersion-hardened nickel or nickel/chromium alloy coated with chromium oxide (see abstract). The chromium oxide layer is oxidation-resistant and protects the core nickel layer from oxidation (see col. 8, line 37). The chromium oxide layer has a thickness of 1 to 20 microns (see col. 8, line 43).

Thus, the instant claims are anticipated.

3. Claims 1, 2, 4, 8, 10, 16, 17, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 19517443. The reference teaches a fuel cell comprising electrodes, a nickel-coated steel mesh current collector on the anode side of the cell, and a bipolar plate

interconnector (see abstract; page 4 of machine translation). The nickel coating on the steel mesh would inherently protect the stainless steel from oxidation. Regarding claims 2 and 17, the nickel coating is also "oxidation resistant" because it would form NiO and resist further oxidation. Regarding claim 8, the claimed layer thickness of approximately 0.1-10 microns is considered to be anticipated because the reference teaches on page 3 of the translation that the wire may be 0.1 mm (100 microns) in diameter and may comprise 5% nickel, which would yield an approximate nickel layer thickness of 5 microns.

Thus, the instant claims are anticipated.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 10, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nazmy in view of DE 19517443.

Nazmy is applied to claims 1-3, 5, 8, 9, 11, 12, and 16-19 for the reasons stated above. However, the reference does not expressly teach that the core of the wire is made of stainless steel, as recited in claims 4, 10, and 20.

As noted above, DE '443 teaches a coated steel mesh current collector in the abstract.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the disclosure of DE '443 indicates that stainless steel is a suitable material for use in fuel cell mesh collectors. The selection of a known material based on its suitability for its intended use has generally been held to be *prima facie* obvious (MPEP §2144.07). As such, it would be obvious to use stainless steel as the core material of the mesh of Nazmy.

6. Claims 6, 7, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nazmy in view of DE 29802444.

Nazmy is applied to claims 1-3, 5, 8, 9, 11, 12, and 16-19 for the reasons stated above. However, the reference does not expressly teach that the coating comprises chromium carbide, as recited in the instant claims.

WO 99/41795 is taken as an equivalent of DE 29802444 as both publications are in the same family. In the abstract, WO '795 teaches a chromium carbide layer located on a fuel cell separator plate. On page 3 of the machine translation, the reference teaches that the chromium carbide layer is oxidation-resistant under operating conditions and maintains good electrical conductivity.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the disclosure of DE '444 (WO '795) indicates that chromium carbide is a suitable material for use as oxidation-resistant layers in high-temperature fuel cells. The selection of a known material based on its suitability for its intended use has generally been held to be *prima facie* obvious (MPEP §2144.07). As such, it would be obvious to use chromium carbide as the oxidation-resistant coating of the mesh of Nazmy.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nazmy in view of DE 19517443 as applied to claims 4, 10, and 20 above, and further in view of DE 29802444.

Nazmy does not expressly teach that the coating comprises chromium carbide, as recited in claim 14.

WO 99/41795 is taken as an equivalent of DE 29802444 as both publications are in the same family. In the abstract, WO '795 teaches a chromium carbide layer located on a fuel cell separator plate. On page 3 of the machine translation, the reference teaches that the chromium carbide layer is oxidation-resistant under operating conditions and maintains good electrical conductivity.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the disclosure of DE '444 (WO '795)

indicates that chromium carbide is a suitable material for use as oxidation-resistant layers in high-temperature fuel cells. The selection of a known material based on its suitability for its intended use has generally been held to be *prima facie* obvious (MPEP §2144.07). As such, it would be obvious to use chromium carbide as the oxidation-resistant coating of the mesh of Nazmy.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached at (571) 272-1414. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau
Patent Examiner
Art Unit 1746
July 8, 2004